

- Regional background soil concentrations for naturally occurring chemicals (i.e., metals);
- Extent of contaminated soil (e.g., area of exposed and/or erodible soil);
- Proximity of source area soil to the river;
- In-water sediment data in proximity to source area;
- Site surface conditions (e.g., exposed soil, paved, slope);
- Riverbank stability (e.g., potential for erosion under extreme rainfall events, potential for erosion under flood conditions, bank erosion rates);
- Soil properties (e.g., soil type, compaction, erodability, permeability);
- Storm water management;
- Proximity of source area soils to storm water catch basins (See Section 5.3 regarding storm water);
- Evaluation of potential soil erosion and contaminant transport (e.g., modeling, quantitative erosion calculations); and
- Estimate of potential contaminant loading to the river.

Source Control Measure Example 1- Erosion Control

Erosion of contaminated riverbank soils directly to the Willamette River is a key transport mechanism for Portland Harbor. If riverbank soils significantly exceed SLVs, the responsible party will be required to evaluate and implement source control measures and may be required to perform in-water sediment sampling directly adjacent to the bank.

Source control measures should focus on removing contaminated soil or stabilizing riverbank soil to prevent erosion. Interim erosion control efforts may be needed to immediately reduce erosion potential, such as placing bales of hay, silt fences, or other types of materials to reduce erosion of contaminated soils.

Excavation/removal of contaminated soil significantly above SLVs is the preferred method for preventing erosion and transport of surface soils to the river. Capping with clean fill or revegetation may be appropriate source control measures or may be performed in conjunction with soil removal. Revegetation includes the planting of trees and shrubs, planting of native grasses with well-defined root structures, and temporary measures such as the placement of straw or binder materials to prevent erosion until root structures take hold. After planting, monitoring must be performed to ensure adequate planting densities are developed and the measure is effective. Berms or construction of engineered wetlands may also be incorporated into a source control measure.

The PRP is responsible for ensuring compliance with all local, state, and federal regulations during source control activities. For example, riverbank source control activities would likely be subject to the City of Portland's Greenway Code 33.440, which regulates shoreline development. The use of riprap is discouraged and may not meet City of Portland Greenway requirements or the need for habitat enhancement within Portland Harbor.

Near-shore shallow sediment sampling may be required to collect adequate data for source control measure design or to assess the priority and timing of potential source control measures. In general, the presence of product-stained or saturated soils immediately adjacent to the river, a storm water catch basin, or within an erosional channel may require source control measure implementation to prevent contaminants from reaching the river.